Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of the Claims:

Claims 1-12 (canceled)

Claim 13 (currently amended): A method for reconstituting a non-human mammalian embryo *in vitro*, wherein said method consists of:

(i) treating a diploid nucleus of a somatic donor cell, said treatment consisting of:

a) controlled proteolysis of nuclear non-histone proteins and surrounding cytoskeleton proteins of the nucleus, wherein the controlled proteolysis must not cause lysis of the nucleus; and

b) induction of an isomorphic swelling of the ~~said~~ nucleus after controlled proteolysis of step a), by treatment with a polyanion; and

(ii) transferring said treated nucleus into the cytoplasm of a recipient oocyte during metaphase II or interphase, wherein the recipient oocyte is enucleated~~, thereby reconstituting a non-human mammalian embryo~~; and

(iii) activating the ~~reconstituted embryo of step (ii)~~ treated nucleus ~~if said~~ when the ~~said~~ recipient oocyte is in metaphase, thereby reconstituting an embryo;

wherein said reconstituted embryo undergoes cell division directed by said treated nucleus.

Claim 14 (previously presented): The method of claim 13, wherein the controlled proteolysis is produced by the action of a serine protease.

Claim 15 (previously presented): The method of claim 14, wherein the serine protease is trypsin or chymotrypsin.

Claim 16 (previously presented): The method of claim 13, said polyanion is selected from the group consisting of polyaspartic acids having a molecular weight of greater than 20,000

Da, heparin, and dextran sulfate.

Claim 17 (previously presented): The method of claim 13, wherein the treated nucleus is contained in the donor cell, and the treatment comprises permeabilization of the cytoplasmic membrane of said cell.

Claim 18 (previously presented): The method of claim 17, wherein permeabilization of the cytoplasmic membrane is carried out with at least one permeabilizing agent selected from the group consisting of lysolecithin, streptolysin, saponin and digitonin.

Claim 19 (previously presented): The method of claim 13, wherein the nucleus is transferred into the recipient cytoplasm by microinjection.

Claim 20 (previously presented): The method of claim 17, wherein the nucleus is transferred into the recipient cytoplasm by fusion of the donor cell and of the recipient cytoplasm.

Claim 21 (previously presented): The method of claim 20, wherein the fusion is carried out by electric shock.

Claim 22 (previously presented): The method of claim 13, wherein the recipient cytoplasm is in the interphase state.

Claim 23 (previously presented): The method of claim 13, wherein said mammal is an ungulate.

Claim 24 (previously presented): The method of claim 23, wherein the ungulate is selected from the group consisting of bovine, ovine, caprine, and porcine.

Claim 25 (canceled)